

# **Trip Report**

## **2003 Annual Inspection of the Parkersburg, West Virginia, Nuclear Waste Policy Act Section 151(c) Disposal Site**

### **Summary**

The Parkersburg, West Virginia, Disposal Site, inspected on October 30, 2003, is in good condition. Vegetation on the cell cover was stressed by drought in 2002 and undesirable weeds have encroached. Additional work will be required to re-establish desired turf species. Minor repairs to the perimeter fence will be made and one perimeter sign will be replaced. Inspectors again found boundary monument BM-4 buried in sediment. No need for a follow-up inspection was identified.

### **1.0 Introduction**

This report presents the results of the annual U.S. Department of Energy (DOE) inspection of the Nuclear Waste Policy Act (NWPA) Section 151(c) disposal site at Parkersburg, West Virginia. M. R. Widdop (Chief Inspector) and M. K. Kastens (Assistant Inspector), both of S.M. Stoller Corporation, the Technical Assistance Contractor for the DOE office in Grand Junction, Colorado, conducted the inspection on October 30, 2003. R. Staubly and L. McGee of DOE participated in the inspection. Inspectors met a subcontractor on site, S. Witkowski of Scot's Landscape Nurseries, Inc., to discuss noxious weed control efforts. The inspection was conducted in accordance with the *Long-Term Surveillance Plan [LTSP] for the Parkersburg, West Virginia, Disposal Site* (DOE-GJO, September 1995).

The purposes of the annual inspection were to confirm the integrity of visible features at the site, to identify changes or new conditions that may affect site integrity, and to determine the need, if any, for maintenance or follow-up inspections and monitoring.

### **2.0 Inspection Results**

Features discussed in this report are shown on the attached drawings. Photographs supporting specific observations are identified in the text and on Sheet 1 of the drawings by photograph location (PL) numbers.

#### **2.1 Site Access and Security Fence**

The access road that leads to the site from Northwest Drive and the grade over the railroad tracks is in good condition and provides adequate clearance for a passenger car. The access route is along a permanent 20-foot-wide right-of-way that is unimpeded. (Northwest Drive was formerly called Foster Drive, as in the LTSP).

The security fence is in fair condition. Although the fence continues to function as designed, most of the chain link fabric is becoming heavily rusted due to the humid climate of the region. The

chain link fence is now approximately 18 years old. No discernable degradation has occurred since the 2002 inspection and, as reported last year, the fence may remain serviceable for another 5 years or more.

Barbed wire is attached to angle brackets along the top of the entire security fence. Inspectors noted that one of the three strands of barbed wire had rusted through and broken at three locations. Generally, the condition of the barbed wire is poor. Inspectors observed severe rusting of the barbed wire at many locations. Apparently, the life expectancy is shorter for the barbed wire than for the chain link fabric. The Long-Term Surveillance and Maintenance (LTS&M) Program will ask the vegetation control subcontractor to repair the broken strands in the spring during a scheduled trip to the site. Additional breaks in the barbed wire are expected, and inspectors will carry fence repair tools and extra wire to repair breaks found during future inspections.

During previous inspections, two bent steel fence posts were noted (near perimeter signs P9 and P14). Additional bent posts were noted between perimeter signs P6 and P7, the top rail was out of its socket at two locations, and several angle brackets were bent or broken.

Because the fence generally remains serviceable, the program will continue to monitor and report on its condition and make minor repairs. At some time, the condition of the fence will become so degraded that the LTS&M Program will request budget and scope to replace the entire security fence system (i.e., posts, fabric, top railing, barbed wire, hardware, etc.).

Padlocks on the entrance and personnel gates are heavily rusted. Some locks on personnel gates are so corroded they no longer work, but the lock on the entrance gate remains serviceable. In 2004, inspectors and other workers visiting the site must be prepared to cut rusted locks to gain access and will carry replacement locks.

## **2.2 Disposal Cell and Area Inside Security Fence**

The grass turf on the disposal cell cover, essentially the area inside the security fence, appeared vital in most areas. Several areas apparently did not recover from the drought in 2002; these are shown as weed-infested areas on Sheet 2 of the attached drawings.

A local subcontractor visited the site in June 2003 to conduct the annual mowing and found poison hemlock (*Conium maculatum*) up to 10 feet high covering 3.8 acres on and near the site (PL-1). This biennial weed is not a listed noxious species in West Virginia; however, it poses a safety hazard to personnel who must walk through or work within infested areas, as all plant parts are poisonous. *Skin contact with this plant should be avoided.* Poison hemlock poses a particular hazard to children, who often play in the soccer fields adjacent to the site. The plant reproduces by seed only and may be effectively controlled with a regular mowing program. It also may be effectively controlled with herbicides, particularly if the plant is sprayed in the rosette stage in the fall or early spring. One insect, the poison hemlock moth (*Agonopterix alstroemeriana*) has been considered for use as a biological control agent for this plant, but its effectiveness is not yet fully known. In July 2003, the LTS&M Program subcontracted to remove the hemlock, which consisted of spraying the plants with herbicide, cutting the plants, removing the root mass, and reseeded. Viable seed remained from the hemlock, and new growth was found in August (PL-2 and PL-3). The eradication process was repeated for the 3.8 acres on the cell cover at that time. In late October, inspectors found other areas, approximately 2 acres in extent, within the fence that were

largely devoid of turf species, having instead barren patches of soil and weeds consisting predominantly of poison hemlock. These areas were sprayed, cut, and overseeded in November 2003.

Canada thistle (*Cirsium arvense*) also has been identified at the site, primarily along the security fence. This weed is not a listed noxious species in West Virginia (although it is considered noxious in the neighboring states of Ohio and Pennsylvania); however, it seems to be outcompeting desirable species on the site. As a best management practice to maintain plant diversity on the property, the LTS&M Program added control of this species to the scope of routine maintenance activities in 2001. Canada thistle reproduces by horizontal roots and by seed, which makes control difficult. The most effective control consists of a combination of methods—mowing two to three times during the growing season and applying herbicide in the fall. Contingent upon DOE approval, the current subcontractor will be directed to conduct this type of program. Additional turf maintenance likely will be required in 2004 to re-establish healthy turf and keep noxious and undesirable species from re-encroaching. Historically, a single mowing in late summer has been sufficient to maintain vigorous turf. In 2004, the LTS&M Program will recommend to DOE that a local subcontractor be retained to make frequent visits to the site to mow the vegetation before undesirable species produce seed and apply herbicide to those plants that cannot be mowed. During the fall months, the LTS&M Program will recommend to DOE that the subcontractor also spot spray undesirable plants to complete their eradication. On the remaining portions of the area within the security fence, the turf is healthy (PL-4 and PL-5).

Inspectors walked a series of traverses inside the security fence to inspect the disposal cell top and grass cover. Inspectors observed no signs of settlement, erosion, or other modifying process that would indicate a threat to cell integrity. The ground was saturated, and water remained in wheel tracks and portions of the perimeter ditch.

The condition of the six monitor wells inside the fence is unchanged. Monitor wells MW-5 and MW-6, installed by DOE in 1994, are in excellent condition. The casings on the four AMAX wells (MW-1 through MW-4) were rusted, and corroded padlocks were inoperable. Ground water samplers replaced the padlocks (PL-6).

## **2.3 Area Between Security Fence and Property Boundary**

Spraying vegetation along the base of the security fence with herbicide is an annual maintenance action at this site. Inspectors noted that weeds along the base of the fence appeared to have been sprayed in 2003.

With one exception, perimeter signs are in good condition. Perimeter sign P1 was destroyed by shotgun blasts (PL-7). The LTS&M Program will send a replacement sign to the local subcontractor to be installed. Adhesive overlays with the correct description of the cell contents were applied to perimeter signs in 2001. These remain in good condition.

Grassed areas outside the security fence were mostly healthy. No erosion was observed. Since 1997, annual mowing operations have included one pass of a tractor and brushhog along the outside of the security fence on the southeast and southwest sides. This appears to be an effective and low-cost means to keep vegetation away from the security fence. Previously, trees and woody bushes intertwined with the fence have been a problem at the Parkersburg site. Ongoing control

practices (cutting, clearing, and spraying with herbicide) appear to be effective, as vegetation growth was not observed to be a pervasive problem at the time of the 2003 site inspection. Continuing control will be necessary to prolong the service life of the fence, facilitate access to and inspection of the fence, and maintain site appearance.

Abundant Canada thistle has been observed since 1999 along the outside of the security fence between perimeter signs P3 and P9. The LTS&M Program will recommend to DOE that a subcontractor be retained to cut woody briar-like vegetation between the north fence line and the property boundary so the extent of Canada thistle can be determined. The subcontractor will continue to assess this area and treat infestations as an extension of weed control activities on the cell cover.

Inspectors identified a small infestation of Johnsongrass (*Sorghum halapense*), a state-listed noxious weed, outside the security fence near monitor well MW-6. This species forms hydrocyanic acid when frosted or moisture-stressed, which is toxic to livestock. Like Canada thistle, Johnsongrass reproduces by horizontal roots and by seed. The most effective control method for this weedy grass consists of mowing the plant during the growing season to prevent seed production and applying herbicide in the summer and/or fall. Generally, 3 to 4 years of treatment is necessary to eradicate this species. Contractor staff will recommend to DOE that the subcontractor begin treatment in 2004.

The drainage channel in the southwest corner of the site, lined with concrete and energy dissipation baffles in August 1996, is in excellent condition and functioning as designed. Erosion has not recurred.

Inspectors could not find boundary monument BM-4 during the 2000 or 2001 site inspections. This monument is in the bottom of a drainage ditch that parallels the northern property boundary. In 2002, a local surveyor located BM-4 beneath more than 4 inches of sediment. In 2003, inspectors again uncovered the monument (PL-8). Inspectors measured the distance between the monument and the fence at two locations so the monument can be located in the field by triangulation. Measuring points are at the second fencepost on either side of the larger fence corner post nearest the monument. This information was added to the inspection drawing. All other boundary monuments were located and are in excellent condition.

## **2.4 Outlying Area**

The Parkersburg site is in a developed industrial area. Inspectors observed that no development or change in adjacent land use has occurred that threatens site integrity or access, or would result in more incidental traffic near the site.

## **3.0 Recommendations**

1. The chain link fabric on the security fence is heavily rusted, as are the three strands of barbed wire on top of the security fence. Other individual fence parts are deteriorated, bent, or broken. The fabric, posts, gates, and top rail may last 5 years or more, but the barbed wire is severely deteriorated at several locations and is expected to continue to break (page 2).

**Recommendation:** Because the fence generally remains serviceable, the program will request scope to repair the fence in 2005. At some time, the condition of the fence will be so degraded that the entire security fence system (i.e., posts, fabric, top railing, barbed wire, hardware, etc.) will require replacement. Inspectors will continue to monitor the overall condition of the fence to determine the optimal time for replacement and will request budget and scope for that activity when necessary. Inspectors will carry repair tools to fix broken barbed wire.

2. Most of the padlocks on the entrance gate, personnel gates, and monitor wells are heavily rusted. These padlocks may be inoperable during future site visits (pages 2 and 3).

**Recommendation:** Inspectors will be prepared to cut rusted padlocks and/or chain and replace with new equipment during future site visits.

3. Perimeter sign P1 was destroyed by shotgun blasts (page 2).

**Recommendation:** The LTS&M Program will send a replacement sign to the local subcontractor to be installed.

4. Historically, a single mowing in late summer has been sufficient to maintain vigorous turf. Additional turf maintenance likely will be required in 2004 to re-establish healthy turf and keep noxious and undesirable species, including poison hemlock, Canada thistle, and Johnsongrass, from encroaching on the cover and elsewhere on the site (pages 3 and 4).

**Recommendation:** Contingent upon DOE approval, in 2004, the LTS&M Program will retain a local subcontractor to make frequent visits to the site and to mow the vegetation before undesirable species produce seed. Spot spraying of undesirable plants may be necessary to complete their eradication. The subcontractor's scope will include cutting woody briar-like vegetation between the north fence line and the property boundary so the extent of Canada thistle can be determined and treated as necessary. The subcontractor also shall mow vegetation along the outside of the fence.

## 4.0 Photographs

Photo Location Number	Azimuth	Description
PL-1	300	Poison hemlock before cutting and spraying.
PL-2	15	Poison hemlock.
PL-3	45	Poison hemlock.
PL-4	60	Turf on disposal cell cover.
PL-5	340	Turf on disposal cell cover.
PL-6	180	Replacing the padlock on monitor well MW-1. Note poison hemlock.
PL-7	330	Perimeter Sign P1.
PL-8	340	Boundary monument BM-4 (left of lath).



PKB 10/2003. PL-1. Poison hemlock before cutting and spraying.



PKB 10/2003. PL-2. Poison hemlock.





PKB 10/2003. PL-3. Poison hemlock.



PKB 10/2003. PL-4. Turf on disposal cell cover.





PKB 10/2003. PL-5. Turf on disposal cell cover.



PKB 10/2003. PL-6. Replacing the padlock on monitor well MW-1. Note poison hemlock.





PKB 10/2003. PL-7. Perimeter Sign P1.



PKB 10/2003. PL-8. Boundary monument BM-4 (left of lath).



